

Computed Radiography, e.g. PCR or other imaging plates

Dose Rate Control setting Velara

Instead of programming IMAGING PLATE for Screens and IMAGING PLATES for Films in a later release of Velara one can select any of the following screens since they have the same kV characteristic (for a 400 speed system):

AGFA MR 400
 KODAK X-OMAT.Rapid
 MAVIG SE-4
 MCI OPTON.R.BlueFast
 REGO NP 400

For the film program :

X-CONSTANT RLF=1

Abbreviation: Any name up to six characters can be given. The abbreviation name should indicate the programmed speed type if different speeds shall be used with the same imaging plates.

Dose of FSC [μGy]: Use **K_s** explanation this page. The value can be adapted to the local "density taste".

Formula to determine the **speed = S** of a film-screen-combination:

$$S = \frac{K_0}{K_s} = \frac{1000 \text{ } \mu\text{Gy}}{\text{Dose of FSC } [\mu\text{Gy}]} \quad \begin{array}{l} \text{--> use speed as} \\ \text{--> abbreviation} \\ \text{--> name} \end{array} \quad \begin{array}{l} \text{!! } S = \text{speed must not be mixed up !!} \\ \text{!! with } S = \text{sensitivity PCR !!} \end{array}$$

K₀ is a constant with a value of 1000 μGy.

K_s is a variable value principally representing a switch off dose to obtain a density of 1.0 above base and fog, (normal films determined by the manufacturer of a film-screen system for defined processing conditions which are different in a computed RAD system). Can be adapted to the local "density taste"

If e.g. K_s = 5 μGy (like the example of the previous page)

$$S = \frac{1000 \text{ } \mu\text{Gy}}{5 \text{ } \mu\text{Gy}} = 200$$

Range of **speed values S** within the standard **speed class SC** systems:

only valid for film-screen-combinations for an optical density of 1.0		
Speed class SC Standard	dose / exposure [μGy] Standard class SC	Speed value S Range
6	167	5 - 9
12	83	10 - 18
25	40	20 - 36
50	20	40 - 71
100	10	80 - 140
200	5	160 - 280
400	2.5	320 - 560
800	1.25	630 - 1100
1600	0.625	1250 - 2200

More information, e.g. for films and screens not appearing in the selection list during programming, are available in booklet "Radiographic screens and films", manual order No. 4512 980 50592.